



**SUPPLEMENTARY 2005/2006**

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**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY EXAMINATION**

**PROGRAMME: BACHELOR OF SCIENCE IN AGRICULTURE YEAR 4 (CROP PRODUCTION, HORTICULTURE OPTIONS) AND BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION YEAR 4.**

**COURSE CODE: CP 403**

**TITLE OF PAPER: MICROBIOLOGY**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS  
BEGIN EACH QUESTION ON A NEW SHEET**

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CHIEF INVIGILATOR**

**QUESTION 1**

- a) Describe the different types of microbes based on temperature requirements. [6]
- b) Describe the following organisms:
- i) Photoautotrophs [4]
  - ii) Photoheterotrophs [3]
  - iii) Chemoheterotrophs [4]
  - iv) Chemoautotrophs [3]
- c) Describe the effects of mutation [5]
- [25 Marks]**

**QUESTION 2**

- a) With the aid of a diagram, explain the basic phases of bacterial growth. [20]
- b) What is the difference between selective media and differential media? [5]
- [25 Marks]**

**QUESTION 3**

Describe the life-cycle of the malaria causal organisms. [25 Marks]

**QUESTION 4**

- a) List Koch's postulates [8]
- b) List the different subtypes of cocci bacteria and explain how they come about. [8]
- c) Explain the lysogenic cycle of bacteriophages. [9]
- [25 Marks]**

**QUESTION 5**

Explain the importance of microbes in the following areas:

- a) Food industry [10]
- b) Nitrogen fixation [15]
- [25 Marks]**